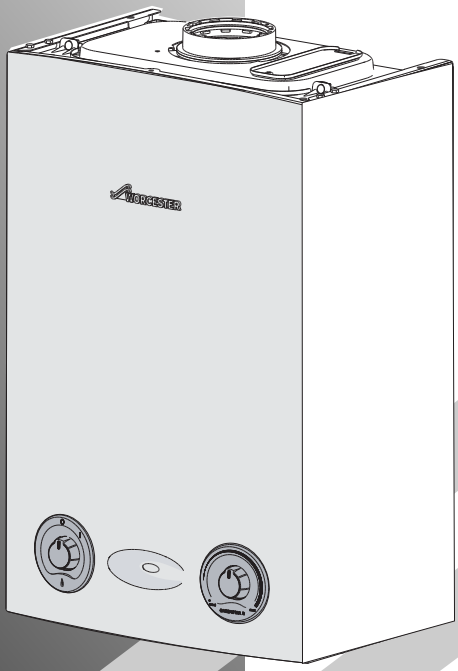
Greenstar 12Ri/24Ri

WALL HUNG GAS-FIRED BOILER

FOR OPEN VENT & SEALED CENTRAL HEATING SYSTEMS & INDIRECT FED DOMESTIC HOT WATER



THIS APPLIANCE IS FOR USE WITH
NATURAL GAS OR LPG (Cat II 2H3P TYPE C13 & C33)

12 Ri NATURAL GAS:	41 311 63
12 Ri LIQUID PETROLEUM GAS:	41 311 64
24 Ri NATURAL GAS:	41 311 65
24 Ri LIQUID PETROLEUM GAS:	41 311 66

USER INSTRUCTIONS & CUSTOMER CARE GUIDE

WORCESTER
Bosch Group

benchmark™

CONTACT INFORMATION

WORCESTER BOSCH:

TECHNICAL:	08705 266241
SERVICE:	08457 256206
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LITERATURE:	01905 752556
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WEBSITE:	www.worcester-bosch.co.uk

WATER TREATMENT:

FERNOX 01799 550811

www.fernox.com

SENTINEL 0151 420 9595

www.betzdearborn.com/sentinel

FLUE TERMINAL GUARDS:

TOWER FLUE COMPONENTS

Vale Rise, Tonbridge TN9 1TB

USER INSTRUCTIONS & CUSTOMER CARE GUIDE

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE OPERATING YOUR APPLIANCE

THESE INSTRUCTIONS ARE APPLICABLE TO THE WORCESTER BOSCH APPLIANCE MODEL(S) STATED ON THE FRONT COVER OF THIS MANUAL ONLY AND MUST NOT BE USED WITH ANY OTHER MAKE OR MODEL OF APPLIANCE.

THE INSTRUCTIONS APPLY IN THE UK ONLY AND SHOULD BE FOLLOWED EXCEPT FOR ANY STATUTORY OBLIGATION.

IF YOU ARE IN **ANY DOUBT** CONTACT THE WORCESTER BOSCH TECHNICAL HELPLINE.

DISTANCE LEARNING AND TRAINING COURSES ARE AVAILABLE FROM WORCESTER BOSCH.

THIS APPLIANCE MUST BE INSTALLED BY A COMPETENT PERSON. FAILURE TO INSTALL CORRECTLY COULD LEAD TO PROSECUTION.

PLEASE LEAVE THIS GUIDE, THE INSTALLATION INSTRUCTIONS AND THE COMPLETED BENCHMARK LOG BOOK WITH THE USER OR AT THE GAS METER AFTER INSTALLATION.

ABBREVIATIONS USED IN THIS BOOK:

NG - Natural Gas

LPG - Liquid Petroleum Gas

CH - Central Heating

SEDBUK - Seasonal Efficiency of Domestic Boilers in the United Kingdom

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EXCELLENCE COMES AS STANDARD

Thank you for purchasing a Greenstar 12/24Ri gas-fired condensing boiler manufactured by Worcester Bosch. The company prides itself on manufacturing boilers to the strictest quality control standards throughout every stage of production. Worcester Bosch has led the field in innovative appliance design and performance for more than 40 years. This heritage means all products are of exceptional quality and proven reliability.

The Greenstar range in particular, is extremely energy efficient, converting up to 97% of gas consumed into heat, offering you economical running costs and value for money. It sits in SEDBUK Band A, and is therefore amongst the top energy rated appliances available.

There is also the reassurance of our no-nonsense 2 years parts and labour guarantee - backed up by Worcester Total Cover, an optional complete maintenance scheme, to keep your boiler operating at peak condition and efficiency.

To find out more about Worcester Bosch log on to www.worcester-bosch.co.uk .

IF YOU SMELL GAS:

Extinguish any naked flame

DO NOT operate any electrical switches

Turn off the gas service cock at the meter

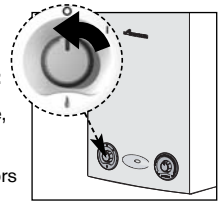
Open windows and doors

Telephone your gas company

IF YOU SMELL FUMES FROM THE APPLIANCE:

Switch off the appliance, as shown

Open windows and doors



BENCHMARK STANDARD benchmark

'Benchmark' is a code of practice for correctly installing, commissioning and servicing of domestic water heating appliances.

A Benchmark Log Book is provided by the manufacturer for the installer to complete ALL details together with their CORGI registration number and sign to confirm that the boiler has been installed and commissioned according to the manufacturer's instructions.

IMPORTANT: The completed Benchmark Log Book will be required in the event of any warranty work and may be required by the local Building Control Inspector.

HEALTH & SAFETY

The appliance contains no asbestos and no substances used in the construction process contravene the COSHH Regulations (Control of Substances Hazardous To Health Regulations 1988).

COMBUSTIBLE AND CORROSIVE MATERIALS

Do not store or use any combustible materials (paper, thinners, paints etc.) inside or within the vicinity of the appliance.

Chemically aggressive substances, such as halogenated hydrocarbons containing chlorine or fluorine compounds can corrode the appliance and invalidate any warranty.

FITTING & MODIFICATIONS

Fitting the appliance and any controls to the appliance or removal of the outer casing may only be carried out by a competent engineer in accordance with the Gas Safety (Installation and Use) Regulations.

Flue systems must not be modified in any way other than as described in the fitting instructions and any misuse or unauthorised modifications to the appliance, flue or associated components and systems could invalidate the warranty. The manufacturer accepts no liability arising from any such actions. This does not affect your statutory rights.

SERVICING

The user is recommended to have the system regularly serviced by a competent, qualified engineer (such as British Gas or CORGI registered personnel) using original spares, to help maintain the economy, safety and reliability of the appliance and to have the Service Record completed in the Benchmark Log Book.

The appliance should be serviced annually after installation unless the particular installation conditions and usage demand more frequent services.

IMPORTANT - ensure that the service engineer completes the Service Record in the Benchmark Log Book after each service.

To get the best from your appliance please read these instructions carefully.

SEALED HEATING SYSTEMS

If the appliance is fitted to a sealed heating system, which is pre-pressurised, your installer will advise you of the minimum and maximum pressure which should be indicated on the pressure gauge.

Check regularly that the pressure is maintained and contact your installer or maintenance engineer if a permanent significant drop in pressure is indicated on the pressure gauge. If the system loses pressure it should be re-pressurised and the cause of the fall investigated.

CENTRAL HEATING SYSTEMS

During the first few hours of operation of the central heating system, check that all radiators are being heated at an even rate. If the top of a radiator is at a lower temperature than the bottom then it should be vented by releasing air through the venting screw at the top of the radiator. Ask your installer to show you how this is done.

If the boiler is fitted to a sealed system ,repeated venting will reduce the quantity of water in the system and this must be replenished for safe and satisfactory operation of the appliance.

Should water leaks be found in the system or excessive venting is required, then a service engineer must be contacted to inspect the installation and rectify any fault.

Only additives that are compatible with aluminium may be used in the system. Any incompatible additive used will invalidate the guarantee.

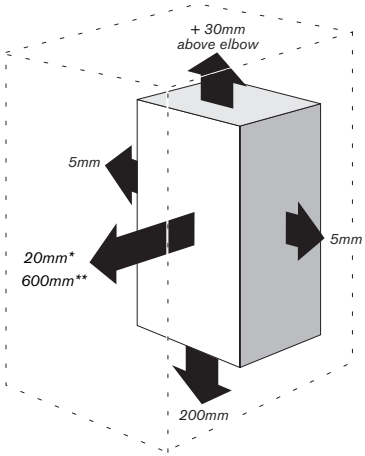
CONDENSATE DRAIN

This is a condensing appliance and the terminal will, at times give out a plume of water vapour. This is quite normal.

The appliance also produces quantities of condensate which is discharged regularly, by a siphon within the boiler, to drain.

CLEARANCES - VENTILATED COMPARTMENT

Your installer will have provided adequate space around the appliance for safety and servicing access. Do not restrict this space with the addition of cupboards, shelves etc. next to the appliance.



***20mm from removable door or panel**
****600mm service clearance required**

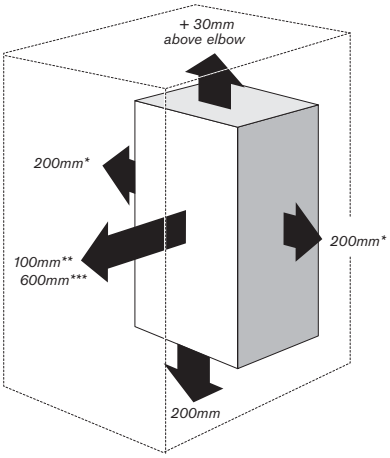
ROOM THERMOSTAT

A room temperature controller and programmer should be fitted to control the central heating. Refer to the instructions supplied with the thermostat for information on siting and setting.

THERMOSTATIC RADIATOR VALVES

It is recommended that this type of valve is fitted to all but one of the radiators (or at least those in the sleeping accommodation). The remaining radiator, which must be where the room thermostat is located, should be un-controlled and must be left open. The thermostatic radiator valves should conform to the requirements of BS2767:10.

GENERAL NOTES



****100mm from removable door or panel**
*****600mm service clearance required**

BOILER CLEARANCES - UNVENTED COMPARTMENT

The diagram opposite shows the minimum space required to install and service the boiler inside an unvented compartment.

*This space can be reduced to 50mm for one side only as long as both the side clearances add up to the total of both the side measurements shown or more.

VENTILATION

This is a room sealed appliance and does not require any air for combustion from inside the property. If the appliance is fitted into a cupboard or a compartment is built around the appliance after installation then the compartment must be separated from the boiler space by a perforated non-combustible partition as described in BS 6798.

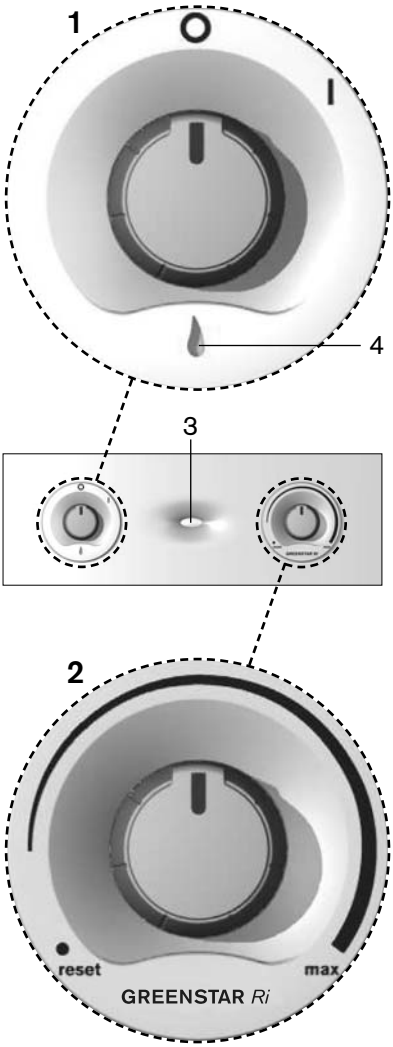
Notwithstanding the requirements of BS 6798 and BS 5440 there is no need for ventilation openings to be provided in the compartment because of the low heat loss from the appliance casing, if the clearances shown are maintained.

Do not operate the appliance if the flue terminal fitted on the outside wall or roof is obstructed or damaged.

PUMP ANTI-SEIZURE

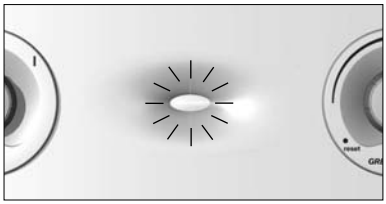
If there has been no heating demand for 24 hours the boiler will run the system pump for a few seconds to reduce the possibility of pump seizure during long periods of inactivity which is usually more frequent during the summer months.

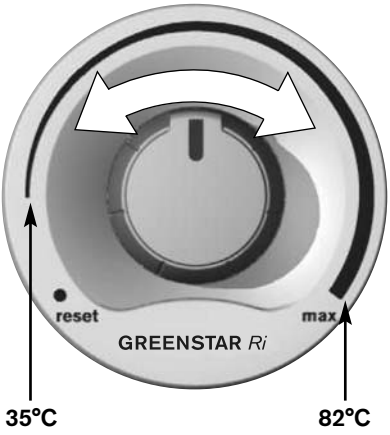
CONTROLS



1. MASTER SWITCH FOR “OFF/ON”
2. CENTRAL HEATING TEMPERATURE CONTROL
3. INDICATOR/DIAGNOSTICS LAMP “MAINS ON/OFF” (BLUE)
4. BURNER “ON” INDICATOR LAMP (GREEN)

IMPORTANT: DO NOT PRESS THE INDICATOR LAMP TO RESET THE APPLIANCE





SWITCHING THE APPLIANCE ON/OFF

Switching on

- Switch on the appliance at the master switch (**I**).

  The indicator lamp shows blue

Switching off

- Switch off the appliance at the master switch (**O**).

  The blue indicator lamp goes out.

SETTING THE CENTRAL HEATING TEMPERATURE

- Turn the central heating temperature control to the desired level, between 35 and 82°C

When the burner is lit, the **green** indicator lamp underneath the on/off switch is illuminated.

CONTROLLING CENTRAL HEATING

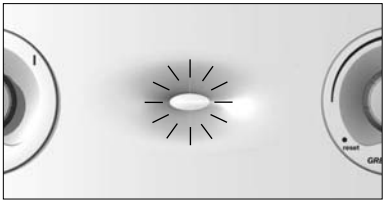
- Set the timer to the correct time.
- Set room thermostat to the desired room temperature.
- Set the thermostatic radiator valves to the desired settings.

FROST PROTECTION

- Leave master switch on.

If the temperature falls to 5°C within the boiler it will fire to avoid the possibility of freezing.

- Add a suitable anti-freeze fluid to the water in the central heating system.
- If remote pipework is likely to get frozen ensure installer has added a frost stat.



FAULT CONDITION

In the unlikely event of a fault occurring while the appliance is in operation:

The mains indicator will flash at different speeds dependant on fault.

- To reset fault turn the thermostat / reset knob anticlockwise then return to desired temperature setting.
- The indicator will stop flashing and the boiler will function normally, dependant on programmer and room thermostat settings.

If the fault remains and cannot be cleared:

- Call Worcester Heat Systems Ltd. for assistance, giving a description of the fault and, if possible the fault flashing sequence from the mains indicator.

Heating economically

The boiler is designed to provide a high level of comfort while keeping gas consumption and the resulting environmental effect as low as possible. The gas supply to the burner is controlled according to the level of demand for heat. The boiler continues to operate with a low flame if the demand for heat reduces. The technical term for this process is modulating control. Modulating control reduces temperature fluctuations and provides even distribution of heat throughout the home. This means that the boiler may stay on for relatively long periods but will use less gas than an appliance that continually switches on and off.

Central heating systems with room thermostats/thermostatic radiator valves

The central heating control on the boiler should be set to the maximum rated temperature of the central heating system.

The temperature of each room can be set individually (except primary room with the room thermostat) using the thermostatic radiator valves. If you wish to have a lower temperature in the primary room than in the other rooms, leave the room thermostat at the set temperature and turn down the radiator using the radiator valve.

Roof insulation

Around 30% of the heat loss from a property is through the roof. Replace any old insulation with new insulation, preferably of around 200mm thickness or more.

Window frames

Single glazed windows, particularly those with steel frames, can lose a great deal of heat. Consideration should be given to replacement with PVCu or wooden framed double glazed units.

Curtains

Lined curtains, or heavier full length curtains can provide excellent insulation. However, always ensure that the curtains do not drape over radiators.

Draughts

Try to ensure that draughts around doors, windows, letterboxes and keyholes etc. are reduced by using a suitable draught excluder. Warning - Do not block or seal any air vents that are installed to ensure the central heating boiler operates safely.

Room thermostats

Reducing the setting of the room thermostat by 1°C can reduce fuel consumption by up to 10%.

New control systems

Upgrade your heating control system if necessary with the latest equipment available. The minimum level of control is a programmer, interlocking room thermostat and thermostatic radiator valves.

Radiators

More than often that not radiators will be sited underneath a window, so the warm air from the radiator heats the colder incoming air from the window. The performance of the radiator will be affected if the curtains are allowed to drape over the radiator or shelves are fitted above it. The positioning of furniture and tables in front of the radiator should also be avoided.

It is advisable to manually adjust all radiator valves every 2-3 months to prevent them sticking. It is also important that the plastic tops of all valves are always in position and not cracked or damaged to prevent accidents. Care should be taken when vacuum cleaning carpets to avoid damage to valves and pipework.

The heating system and the outputs of the radiators have been carefully selected by your installer. The temperature obtainable in any given room is dependent on all radiators being operated at the same time. If you decide to turn off radiators in unused rooms, spare bedrooms etc., you may experience slightly lower room temperatures in rooms adjacent to unheated rooms.

MAINTAINING YOUR APPLIANCE

Your new Greenstar 12Ri/24Ri gas-fired appliance represents a long term investment in a reliable, high quality product.

In order to realise its maximum working life, and to ensure it continues to operate at peak efficiency and performance, it is essential that your boiler receives regular servicing and maintenance checks from a competent person beyond the initial 2 year guarantee period.

If you would like to know more about a Worcester Bosch service contract, please tick the appropriate box on your warranty registration card.

If your Greenstar 12Ri/24Ri should fail to operate correctly or requires servicing please contact the Worcester Bosch Service Department, see inside front cover for details.

Problem	Cause	Remedy
Desired room temperature is not reached	Thermostatic radiator valve(s) set too low	Increase thermostatic radiator valve setting(s)
	Temperature control for CH flow on boiler set too low	Increase CH flow temperature control setting
	Air trapped in heating system	Bleed radiators if fitted to a sealed system and recharge heating system
Desired room temperature exceeded by large amount	Radiators are too hot	Turn down thermostatic radiator valves / room stat
Temperature rises instead of falling	Clock is incorrectly set	Check setting
No on/off indicator	Momentary power failure	Switch off appliance at master switch, wait a few seconds then switch on again
Hot water temperature too low	Tank thermostat temperature set too low Programmer setting Diverter valve	Check setting

FAULT OR BREAKDOWN

This appliance is supported in the UK by Worcester Heat Systems Ltd. - part of the Bosch Group.

Specialist factory trained Service Engineers are available to attend a breakdown occurring on this appliance.

No charge will be made for parts and/or labour providing:

- An appliance fault is found and the appliance has been installed within the past 24 months. Reasonable evidence of this must be supplied on request. i.e. the Benchmark Logbook.

A call-out charge will be made where:

- The appliance has been installed for over 24 months

  OR

- Our Field Service Engineer finds no fault with the appliance (see **Note**).

  OR

- The cause of breakdown is misuse or with other parts of your plumbing/heating system, or with equipment not supplied by Worcester Heat Systems Ltd.

Note. NO APPLIANCE FAULT IS FOUND ON OVER 30% OF ALL SERVICE CALL OUTS.

Please read this guide carefully to gain a good understanding of the operation of your appliance. In the case of a suspected fault, refer to the fault finding section of this guide.

If in doubt contact our Technical Helpline

In the event of an appliance fault or breakdown please contact our Service Department. Your service administrator will arrange for an engineer to call with the minimum of delay; under normal circumstances this will be from 1 to 3 working days (excluding weekends) for priority breakdown situations (no hot water and/or heating).

Invoices for attendance and repair work carried out on this appliance by any third party will not be accepted.

YOUR GUARANTEE

This appliance is guaranteed against faulty material or workmanship for a period of 2 years from the date of installation subject to the following terms and conditions:

- During the period of this guarantee any components of the unit which are proven to be faulty or defective in manufacture will be exchanged or repaired free of charge by Worcester Heat Systems Ltd.
- The householder may be asked to prove the date of installation, that the appliance was correctly commissioned and, where appropriate, the first years service has been carried out to the satisfaction of Worcester Heat Systems Ltd. when requested. These should be part of the Benchmark Logbook.
- Any product or part returned for servicing under the guarantee must be accompanied by a claim stating the model, serial number, date of installation.
- Worcester Heat Systems Ltd will not accept responsibility for damage caused by faulty installation, neglect, misuse or accidental damage or the non observance of the instructions contained in the Installation and Servicing Manual and users instructions.
- The appliance has been used only for normal domestic purposes for which it was designed.
- This guarantee applies only to equipment purchased and used in the United Kingdom.

This guarantee does not affect your statutory rights.

GUARANTEE REGISTRATION

You should complete and return the postpaid Guarantee Registration Card within 14 days of purchase.

Returning the card will register you as the owner of your new Greenstar 12Ri/24Ri appliance and will assist us in maintaining an effective and efficient customer service by establishing a reference and permanent record for your boiler.

This does not affect your statutory rights.

For your own record:

Model _____

Serial No. _____

(See identity label inside appliance casing)

Type / size _____

Date of installation _____

Check that the Benchmark "Log Book" has been completed by your installer or service engineer.

USER INSTRUCTIONS & CUSTOMER CARE GUIDE

EXCELLENCE COMES AS STANDARD

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